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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/176,639	10/20/1998	RICHARD ROBERT SCHEDIWY	20864.00600	2112

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EXAMINER	
KUMAR, SRILAKSHMI K	

ART UNIT	PAPER NUMBER
2675	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/176,639	SCHEDIWY ET AL.	
	Examiner	Art Unit	
	Srilakshmi K. Kumar	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16,21-40,42-50 and 52-63* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) *63* is/are allowed.

6)☐ Claim(s) *16,21-23,25-40,42-50 and 52-62* is/are rejected.

7)☐ Claim(s) *24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The following office action is in response to Amendment C, filed August 27, 2004. Claims 17-20, 41 and 51 have been cancelled. Claims 16, 21-24, 28-30, 32, 36-40, 42-40 have been amended. Claims 52-63 are newly added.

With regards to the 35 USC 112, first paragraph rejection of claims 16, 21-24, 28, 30, and 44, they have been withdrawn as those claims were amended to overcome the rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 16-25, 27-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grabner et al (US 4,731,694) in view of Miller et al (US 5,374,787).

As to independent claims 16 and 37, Grabner et al disclose a touch pad system comprising, a sensor layer (Fig. 1, items 7 and 8), an insulative layer, (Fig. 1, item 24) (col. 3, lines 20-22, 31-61 and col. 4, lines 26-30). In a special embodiment of the touch pad, the insulative layer 24 also comprises a metallized layer as a conductor on upper flat surface. It would have been obvious that this extra layer shows the three layers of the touch pad with the sensor layer on the bottom, the insulative layer on top of the sensor layer and the conductive

layer on top of the insulative layer. This order could be advantageous as to have better touch detection.

Grabner et al do not disclose where said touch layer having a conductivity selected to create an image of a conductive object that is larger than an area of contact of said conductive object, and wherein said sensor layer capacitively detects the image of said conductive object when a user places a conductive object proximate said touch layer.

Miller et al disclose in col. 8, line 58-col.9, line 25 where said touch layer having a conductivity selected to create an image of a conductive object that is larger than an area of contact of said conductive object, and wherein said sensor layer capacitively detects the image of said conductive object when a user places a conductive object proximate said touch layer.

It would have been obvious to one of ordinary skill in the art to incorporate the object position detector of Miller et al as the sensor layer of Miller et al is shown to be of a sensor layer that would be used in touch panels and would be advantageous as it uses capacitive sensing rather than resistive as is shown in col. 4, lines 12-28 which is advantageous as it can sense the entire area of the finger in contact with the touch panel as opposed to just the pressing sensation of a resistive type of touch panel.

As to independent claims 42 and 52, limitations of claims 16 and 37, and further comprising, wherein a visual mark of a conductive object contacting said touch surface is produced. Grabner and Miller do not explicitly disclose a visual mark of a conductive object. It would have been obvious to one of ordinary skill in the art that a visual mark would be present as systems disclosed by Grabner and Miller disclose touch/stylus input and further, it is well known in the art that touch input systems such as personal digital assistants show visual marks. It would

have been obvious to one of ordinary skill in the art to incorporate the object position detector of Miller et al as the sensor layer of Miller et al is shown to be of a sensor layer that would be used in touch panels and would be advantageous as it uses capacitive sensing rather than resistive as is shown in col. 4, lines 12-28 which is advantageous as it can sense the entire area of the finger in contact with the touch panel as opposed to just the pressing sensation of a resistive type of touch panel.

As to dependent claims 21-23, 53 see limitations of claims 16, 37, and 52 above.

As to dependent claims 25, 54 and 62, limitations of claims 16 and 52 and further comprising, wherein said touch layer is formed with a conductive material disposed in a plastic carrier. Grabner et al do not disclose the feature of a plastic carrier. Miller et al disclose a plastic carrier in col. 8, lines 8-57. It would have been obvious to one of ordinary skill in the art to incorporate the object position detector of Miller et al as the sensor layer of Miller et al is shown to be of a sensor layer that would be used in touch panels and would be advantageous as it uses capacitive sensing rather than resistive as is shown in col. 4, lines 12-28 which is advantageous as it can sense the entire area of the finger in contact with the touch panel as opposed to just the pressing sensation of a resistive type of touch panel.

As to dependent claim 27, limitations of claim 16, and further comprising, wherein said insulative layer, said touch layer and said sensor layer are transparent (col. 3, lines 20-22, 31-61 and col. 4, lines 26-30).

As to dependent claims 28 and 56, limitations of claim 27, and further comprising, wherein a display in operative communication below said sensor layer and where said display configured to be viewable through said sensor layer, insulative layer and touch layer. Miller et al

disclose in col. 1, lines 36-49, col. 4, lines 12-28 where there is a display below the sensor layer. It would have been obvious to one of ordinary skill in the art to incorporate the object position detector of Miller et al as the sensor layer of Miller et al is shown to be of a sensor layer that would be used in touch panels and would be advantageous as it uses capacitive sensing rather than resistive as is shown in col. 4, lines 12-28 which is advantageous as it can sense the entire area of the finger in contact with the touch panel as opposed to just the pressing sensation of a resistive type of touch panel.

As to dependent claim 29, limitations of claim 28, and further comprising, wherein said display is configured to provide visual feedback to a user of the touch pad system. Grabner and Miller et al do not explicitly disclose a visual mark feedback. It would have been obvious to one of ordinary skill in the art to incorporate the object position detector of Miller et al as the sensor layer of Miller et al is shown to be of a sensor layer that would be used in touch panels and would be advantageous as it uses capacitive sensing rather than resistive as is shown in col. 4, lines 12-28 which is advantageous as it can sense the entire area of the finger in contact with the touch panel as opposed to just the pressing sensation of a resistive type of touch panel.

As to dependent claim 30, see limitations of claims 16, 37 and 51, above.

As to dependent claim 31, limitations of claim 16, and further comprising, wherein said conductive object comprises one of metal and conductive plastic, wherein said conductive object is electrically conductive. Grabner et al do not explicitly disclose the feature of where the conductive object comprises one of metal and conductive plastic. Miller discloses where the conductive object comprises one of metal and conductive plastic in col. 8, lines 8-col. 9, line 25. It would have been obvious to one of ordinary skill in the art that the conductive object

comprises one of metal and conductive plastic as such materials are required in order to effectively use the conductive object on the touch pad system. It would have been obvious to one of ordinary skill in the art to incorporate the object position detector of Miller et al as the sensor layer of Miller et al is shown to be of a sensor layer that would be used in touch panels and would be advantageous as it uses capacitive sensing rather than resistive as is shown in col. 4, lines 12-28 which is advantageous as it can sense the entire area of the finger in contact with the touch panel as opposed to just the pressing sensation of a resistive type of touch panel.

As to dependent claim 32, limitations of claim 16, and further comprising, wherein said conductive object includes a conductive tip, said conductive tip is selected from the group consisting of a wide stylus, a ball of conductive foam, and a circular metal plate with a ball joint. Grabner et al and Miller et al do not disclose where a conductive tip is selected from the group consisting of a wide stylus, a ball of conductive foam, and a circular metal plate with a ball joint, however the Examiner takes Official Notice, as the limitation of different conductive tips is well known in the art.

As to dependent claim 33, limitations of claim 16, and further comprising, wherein said conductive object comprises a fine tipped conductive pen. Grabner et al and Miller et al do not disclose where a conductive object comprises a fine tipped conductive pen, however the Examiner takes Official Notice, as the limitation of a fine tipped conductive pen is well known in the art.

As to dependent claim 38, see limitations of claims 16, 37 and 52, above.

As to dependent claim 39, limitations of claim 37, and further comprising, wherein said means for distinguishing an identity of said conductive object comprises a means based on the

detected change in capacitance, wherein said detected change in capacitance is variable over a time period for a finger proximate said conductive touch layer and said detected change in capacitance is substantially constant over a time period for a stylus contacting said conductive touch layer. Grabner et al do not disclose this feature. Miller et al disclose wherein said means for distinguishing an identity of said conductive object comprises a means based on the detected change in capacitance, wherein said detected change in capacitance is variable over a time period for a finger proximate said conductive touch layer and said detected change in capacitance is substantially constant over a time period for a stylus contacting said conductive touch layer in col. 8, line 58-col. 9, line 25. It would have been obvious to one of ordinary skill in the art to incorporate the object position detector of Miller et al as the sensor layer of Miller et al is shown to be of a sensor layer that would be used in touch panels and would be advantageous as it uses capacitive sensing rather than resistive as is shown in col. 4, lines 12-28 which is advantageous as it can sense the entire area of the finger in contact with the touch panel as opposed to just the pressing sensation of a resistive type of touch panel.

As to dependent claims 40 and 60, limitations of claims 37 and 52, and further comprising, wherein said means for distinguishing an identity of said conductive object comprises a means based on a rate of change of the detected change in capacitance, wherein a stylus produces an immediate full strength detected change in capacitance upon contacting said conductive touch layer and a finger produces a gradually increasing detected change in capacitance as said finger approaches contacting said conductive touch layer. Grabner et al do not disclose this feature. Miller et al disclose means for distinguishing an identity of said conductive object comprises a means based on a rate of change of the detected change in

capacitance, wherein a stylus produces an immediate full strength detected change in capacitance upon contacting said conductive touch layer and a finger produces a gradually increasing detected change in capacitance as said finger approaches contacting said conductive touch layer in col. 8, line 58-col. 9, line 25. It would have been obvious to one of ordinary skill in the art to incorporate the object position detector of Miller et al as the sensor layer of Miller et al is shown to be of a sensor layer that would be used in touch panels and would be advantageous as it uses capacitive sensing rather than resistive as is shown in col. 4, lines 12-28 which is advantageous as it can sense the entire area of the finger in contact with the touch panel as opposed to just the pressing sensation of a resistive type of touch panel.

As to dependent claims 43 and 44, see limitations of claim 42, above.

As to dependent claims 45 and 61, limitations of claims 42 and 52, and further comprising, wherein said visual mark is an alteration in at least one of color and reflectivity produced by mechanical contact of said conductive object with said conductive layer. Grabner et al and Miller et al do not disclose the feature said visual mark is an alteration in at least one of color and reflectivity produced by mechanical contact of said conductive object with said conductive layer, however the Examiner takes Official Notice, as the limitation of said visual mark is an alteration in at least one of color and reflectivity produced by mechanical contact of said conductive object with said conductive layer is well known in the art.

As to dependent claim 46, limitations of claim 42, and further comprising, wherein said visual mark is produced by a sacrificial material on a tip of said conductive object in response to mechanical contact of said conductive object with said conductive layer. Grabner et al and Miller et al do not disclose the feature of where the visual mark is produced by a sacrificial

material on a tip of said conductive object, however the Examiner takes Official Notice, as the limitation of where the visual mark is produced by a sacrificial material on a tip of said conductive object is well known in the art.

As to dependent claim 47, limitations of claim 46, wherein said sacrificial material is pencil graphite. Grabner et al and Miller et al do not disclose the feature of where sacrificial material is pencil graphite, however the Examiner takes Official Notice, as the limitation of where sacrificial material is pencil graphite is well known in the art.

As to dependent claim 48, limitations of claim 42, and further comprising, wherein said visual mark is produced by a groove in a surface of said conductive layer in response to mechanical contact of said conductive object with said conductive layer, wherein said surface of said conductive layer comprises a pliant material. Grabner et al do not disclose this feature. Miller et al disclose visual mark is produced by a groove in a surface of said conductive layer in response to mechanical contact of said conductive object with said conductive layer, wherein said surface of said conductive layer comprises a pliant material as is shown in Fig. 4. It would have been obvious to one of ordinary skill in the art to incorporate the object position detector of Miller et al as the sensor layer of Miller et al is shown to be of a sensor layer that would be used in touch panels and would be advantageous as it uses capacitive sensing rather than resistive as is shown in col. 4, lines 12-28 which is advantageous as it can sense the entire area of the finger in contact with the touch panel as opposed to just the pressing sensation of a resistive type of touch panel.

As to dependent claim 49, limitations of claim 42, and further comprising, wherein said visual mark produced by mechanical contact of said conductive object with said conductive layer

is removable. Grabner et al and Miller et al do not disclose where the visual mark is removable, however the Examiner takes Official Notice, as the limitation of where the visual mark is removable is well known in the art.

As to dependent claim 50, limitations of claim 42, and further comprising, wherein said visual mark is produced by a layer of liquid crystal material coupled to said conductive layer in response to mechanical contact of said conductive object with said conductive layer. Grabner et al and Miller et al do not disclose where visual mark is produced by a layer of liquid crystal material coupled to said conductive layer in response to mechanical contact of said conductive object with said conductive layer, however the Examiner takes Official Notice, as the limitation of where visual mark is produced by a layer of liquid crystal material coupled to said conductive layer in response to mechanical contact of said conductive object with said conductive layer is well known in the art.

3. Claims 34-36, 58 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grabner et al in view of Miller et al and further in view of Greanias et al (US 5,386,219).

As to dependent claims 34 and 57, limitations of claims 16 and 52, and further comprising, wherein a bezel disposed on said touch layer, wherein said bezel is configured to prevent edge distortion. Grabner et al and Miller et al do not disclose the feature of a bezel. Greanias et al disclose the feature of a bezel to prevent edge distortion in col. 5, lines 48-63. It would have been obvious to one of ordinary skill in the art to combine the system of Grabner et al with that of Greanias et al as they both disclose a touch panel with sensor, insulative and conductive layers where a finger or stylus may be used. The bezel of Greanias et al well known in the art as it protects the edges of the display.

As to dependent claims 35, 36, 58 and 59, limitations of claims 16 and 52, and further comprising, wherein the touch pad system is configured to compensate for edge distortion by calibration means, wherein said calibration means comprises, measurement of a stylus position at locations on said sensor layer; tabulation of said measurements of said stylus position; development of mathematical function from said tabulation and calculation of a correction function from said mathematical function. Grabner et al, Miller et al and Greanias et al do not disclose the feature of compensating edge distortion by calibration means, however the Examiner takes Official Notice, as the limitation of compensating edge distortion by calibration means is well known in the art.

4. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grabner et al in view of Miller et al and further in view of DePalma et al. (US 5,558,977).

As to independent claim 26, limitations of claim 16, and further comprising, wherein said conductive material comprises carbon powder. Grabner et al do not disclose where the conductive material comprises carbon powder. DePalma et al discloses transparent conductive layer. In col. 2, lines 39-46 DePalma et al disclose where conductive layers have been described to contain conductive carbon particles. Further DePalma et al disclose in col. 11, lines 13-24 where these conductive layers are used in touch panels and liquid crystal displays. It would have been obvious to one of ordinary skill in the art to combine the system of Grabner et al with that of DePalma et al as DePalma et al disclose the composition of a conductive layer used in touch panels and liquid crystal displays. The addition of a conductive carbon in the conductive layer is advantageous as it would be an antistatic system which is one where the electrostatic charge can

be dissipated as is advantageous as it reduces irregular fog patterns and provides a high degree of transparency as is disclosed in col. 1, lines 29-37 and col. 5, lines 26-40.

Allowable Subject Matter

5. Claim 63 is allowed.

6. Claim 24 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: With respect to claims 24 and 63, the prior art of record do not disclose wherein the conductivity of said touch layer is configured to limit the size of said image to approximately four times the area of contact of said conductive object.

Response to Arguments

8. Applicant's arguments with respect to claims 16, 21-40, 42-50 and 52-63 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srilakshmi K. Kumar whose telephone number is 703 306 5575. The examiner can normally be reached on 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, xxxx xxxx can be reached on xxx xxx xxxx. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305 4700.

Srilakshmi K. Kumar
Examiner
Art Unit 2675

SKK
September 19, 2004

DENNIS-DOON CHOW
PRIMARY EXAMINER